

Jonathan H. Jiang

Email: Jonathan.H.Jiang@jpl.nasa.gov; **Tel:** 1-818-207-8734; **Address:** 4800 Oak Grove Drive, Pasadena, CA 91109, USA.

Research Areas: My research centers on developing novel methodologies for retrieving microphysical properties of ice clouds from space, and the applications to the studies of cloud forcing and feedbacks to climate, aerosol-cloud interaction, and modeling climate change projections. I am also leading a team of scientists and engineers at JPL to help manage current Earth science missions (MISR and CloudSat) and to prepare future missions (MAIA and ENTICE). In addition to the Earth science field, I'm also conducting active research in astrophysics, focusing on exoplanet and space science researches. Over the past 20+ years at JPL, I served as PIs for NASA ROSES AC, ACPMAP, AST, CCST, COUNDR, MAP, NDOA, DSCOVERST, and XRP programs; I also mentored 17 postdocs.

Education

1997: **Postdoctoral Research Fellow** in Atmospheric Science, McGill University, Montreal, Canada

1996: **Ph.D.** in Atmospheric Science, York University, Toronto, Canada

1991: **M.Sc.** in Astrophysics, York University, Toronto, Canada

1985: **B.Sc.** in Astrophysics, Beijing Normal University, China

Employment

- **Group Supervisor** (2015-present), Aerosol and Cloud Research Group, Jet Propulsion Laboratory (JPL), California Institute of Technology (Caltech), Pasadena, California, USA.
- **Principal Scientist** (2014-present), JPL Engineering and Science Directorate, Caltech
- **Research Scientist V** (2013-2014), JPL, Caltech
- **Research Scientist IV** (2004-2012), JPL, Caltech
- **Scientist III** (2002-2003), JPL, Caltech
- **Caltech Postdoctoral Scholar** (1999-2001), Caltech
- **Research Associate** (1998-1999), Université du Québec à Montréal, Quebec, Canada
- **Physics Lecturer** (1997-1998), Trent University, Peterborough, Ontario, Canada
- **Postdoctoral Research Fellow** (1996-97), McGill University, Montreal, Quebec, Canada
- **Physics Lecturer** (1996, 1999), University of Waterloo, Waterloo, Ontario, Canada
- **Research Assistant** (1991-1995), Centre for Research in Earth and Space Science, Toronto, Canada
- **Teaching Assistant** (1991-1995), Physics Department, York University, Toronto, Canada
- **Assistant Researcher** (1989-1990), Space Astrophysics Laboratory, Ontario, Canada
- **Physics Lecturer** (1985-1989), Nanking Institute of Technology, Nanjing, China

Awards

2022: **JPL Voyager Award** for outstanding interdisciplinary research bridging the fields Earth science, planetary science and astrophysics.

2020: **The Reuters List of Word's Top Climate Scientists**

<https://www.reuters.com/investigates/special-report/climate-change-scientists-list/>

2019: **Exceptional Scientific Achievement Medal** for exceptional scientific achievement by significantly enhancing understanding of impacts of aerosol pollution on convection, clouds, and climate.

2019: **Edward Stone Award** for outstanding scientific research publications.

2016: **JPL Team Award** for outstanding leadership & effective management of combining sections 324 & 328.

2013: **NASA Exceptional Achievement Medal** for outstanding leadership and achievements in using NASA satellite observations for climate studies and model evaluations, contributing to the IPCC AR5.

2012: **JPL Publication Award** for outstanding CMIP5 climate model evaluation publications using NASA data

2010: **NASA Exceptional Achievement Medal** for pioneering a new approach to quantifying the impact of air pollution on clouds and climate, through combining observations from multiple NASA satellites.

2008: **NASA Team Achievement Award** for outstanding contribution to NASA TC4 field experiment.

2007: **JPL Team Award** for scientific application of Aura Microwave Limb Sounder (MLS) Cloud Ice product.

2006: **NASA Group Achievement Award** for Aura Microwave Limb Sounder Science Team.

2006: **Edward Stone Award** for outstanding scientific research paper, co-author.

2005: **NASA Group Achievement Award** for outstanding contribution to the Aura MLS Project.

2005: **GSFC Group Achievement Award** for outstanding contribution to the Aura Science Team.

2005: **NASA Space Act Award** for Significant Contribution to National Space Program.
 2004: **JPL Publication Award** for outstanding scientific publications.
 2004: **NASA Group Achievement Award** for contribution to Aura Ground Data System Development.
 2002: **JPL SPOT Award** for successfully development of microwave cloud forward model and retrieval system.
 1999: **Canadian NSERC Research Scholarship Award** for outstanding early career scientists.
 1996: **AMS Global Change Travel Award** for outstanding student presentation.
 1989-1995: **Ontario Scholarship Award** for outstanding graduate students.

Other leadership positions, notable committees and professional activities

- **American Meteorological Society (AMS)** (1995-present);
 - **Chair**, AMS Atmospheric Chemistry Committee (2020-present)
 - **Vice-Chair**, AMS Atmospheric Chemistry Committee (2017-2019)
 - **Member**, AMS Atmospheric Chemistry Committee (2014-2016)
 - **Program Chair**, AMS 22nd Conference on Atmospheric Chemistry (2019-2020)
 - **Program Chair**, AMS 21th Conference on Atmospheric Chemistry (2018-2019)
 - **Program Chair**, AMS 20th Conference on Atmospheric Chemistry (2017-2018)
 - **Program Chair**, AMS 19th Conference on Atmospheric Chemistry (2016-2017)
 - **Program Co-Chair**, AMS 18th Conference on Atmospheric Chemistry (2015-2016)
- **American Geophysical Union (AGU)** (1995-present)
 - **Editor in Chief**, Earth and Space Science Open Archive (2021-present)
 - **Editor**, Earth and Space Science (2014-present)
 - **Associate Editor**, Journal of Geophysical Research – Atmosphere (2012-present)
 - **Chair**, AGU Atmospheric Science Program Committee (2017)
 - **Member**, AGU Atmospheric Science Program Committee (2016)
 - **Coordinator**, Outstanding Student Paper Awards (OSPA), AGU Fall Meeting (2014-2016)
 - **Session Chair**, AGU Fall Meetings (2009-2020)
 - **AGU Editorial Tour Organizer**, organized AGU workshops for over 30 universities and institutes around the world to promote AGU journals (2015-2019)
- **American Astronomical Society (AAS)**
 - Member (2019-present)
- **International Commission on Atmospheric Chemistry and Global Pollution (iCACGP)**
 - Member of Scientific Steering Committee (2019-present)
- **Asia Oceania Geosciences Society (AOGS)**
 - Session Chair, AOGS Annual Meetings (2011-present)
- **American Association for the Advancement of Science (AAAS)**
 - Member (2003-present)
- **Canadian Meteorological and Oceanographic Society (CMOS)**
 - Member (1992-2000)
- **Committee on Space Research (COSPAR)**
 - Member and Session Chair, Scientific Assembly (2002-2004)
- **European Geosciences Union**
 - Member (2007-present)
- **Review Panels**: Served on NASA, NSF, DOE, ESA, and CSA panels multiple times (2002-present)
- **Active Reviewer** for more than 20 journals, include Nature, Science, PNAS, and AGU, AMS, AAS, and other international journals (1996-present)
- **President and Board Member**, The Chinese-American Oceanic and Atmospheric Association, Southern California Chapter (2013-2015)
- **Science-Technology-Engineering-Mathematics (STEM) Program Chair**, The Chinese-American Engineers and Scientists Association of Southern California (2018-2020).
- **Given 150+ invited scientific seminars and public STEM presentations over the past 20+ years.**

Selected Refereed Publications

(Over 220 peer-reviewed papers, H-Index 50)

Publication summary: More than 220 peer-reviewed journal articles, including Nature Climate Change (1), Nature Climate & Atmospheric Science (2), Nature Geoscience (2), Nature Communications (4), Nature Astronomy (1), PNAS (3), Science Advances (2), Scientific Reports (2), and Physics Today (1), etc., with total citations are over 10,700 with h-index of 50, and 23 papers have been cited over 100 times, according to the ISI Web of Science. Ten of these publications were widely covered by the media/news outlets.

1. Johnson, K., **J.H. Jiang**, Q. Yue, K. A. Fahy, S. Palo, ENTICE Satellite Orbital Simulator to Study Ice Clouds, *Earth and Space Science*, doi:10.1029/2021EA002145, 2022.
2. J. Zhang, K. Zhang, M. Zhang, **J.H. Jiang**, P. Rosen, K. Fahy, Avoiding the "Great Filter": An Assessment of Climate Change Solutions and Combinations for Effective Implementation, *Climate*, arXiv:2205.00133, in press, 2022.
3. Rosen, P., D. Zhang, J.H. Jiang, L. Ijzendoorn, K. Fahy, Z. Zhu, Impact of Economic Constraints on the Projected Timeframe for Human-Crewed Deep Space Exploration, *Galaxies*, in press, 2022.
4. Bartlett, S., J. Li, L. Gu, L. Sinapayen, S. Fan, V. Natraj, **J.H. Jiang**, D. Crisp, Y. Yung, Assessing planetary complexity and potential agnostic biosignatures using epsilon machines, *Nature Astronomy*, 6, 387–392, 2022.
5. **Jiang, J.H.**, H. Li, M. Chong, Q. Jin, P. Rosen, X. Jiang, K. Fahy, S. Taylor, Z. Kong, J. Hah, Z. Zhu, A Beacon in the Galaxy: Updated Arecibo Message for Potential FAST and SETI Projects, *Galaxies*, 10, 55, 2022.
6. Li, J., W. Lee, K. Xu, **J.H. Jiang**, Y. Wang, E. Fetzer, G. Stephens, J. Yu, Y. Liu, Observational evaluation of global climate model simulations of arctic sea ice and adjacent land pertaining to the radiative effects of frozen hydrometeors, *Environmental Research Communications*, 4, 2002.
7. **Jiang, J.H.**, F. Feng, P. Rosen, K. Fahy, P. Das, P. Obacz, A. Zhang, Z. Zhu, Avoiding the Great Filter: Predicting the Timeline for Humanity to Reach Kardashev Type I Civilization, *Galaxies*, 10(3), 68, 2022.
8. Khan, P., D. Ratnam, P. Prasad, G. Basha, **J.H. Jiang**, R. Shaik, M. Ratnam, P. Kishore, Observed Climatology & Trend in Relative Humidity, CAPE, and CIN over India, *Atmosphere*, 3(2), 361, 2022.
9. **Jiang, J.H.**, R. Burn, K. Fahy, X. Ji, P. Eggenberger, Angular momentum distributions for observed and modeled exoplanetary systems, *The Astrophysics Journal*, Vol. 924, No. 118, 2022.
10. Kong, Z., **J.H. Jiang**, R. Burn, K. Fahy, Z. Zhu, Analyzing the Stability of Non-coplanar Circumbinary Planets using Machine Learning, *Astrophysical Journal*, 929, 187, 2022.
11. Li, J., **J.H. Jiang**, H. Yang, D.S. Abbot, R. Hu, T. Komacek, S. Bartlett, Y. Yung, Rotation Period Detection for Earth-like Exoplanets, *Astronomical Journal*, Vol.163, No. 27, 2022.
12. Sravani, C., P. Kishore, **J.H. Jiang**, S. Rao, Climatological Changes in Soil Moisture during the 21st Century over the Indian Region Using CMIP5 and Satellite Observations, *Remote Sensing*, 14(9), 2108, 2022.
13. **Jiang, J.H.**, When Less is More—The Moon Sheds Light on Clouds at Night, *Eos*, 12 April, 2022.
14. Chen, Q., X. Han, Y. Gu, Y. Yuan, **J.H. Jiang**, X. Yang, K. Liou, H. Tan, Evaluation of MODIS, MISR, and VIIRS daily level-3 aerosol optical depth products over land, *Atmospheric Research*, Vol. 265, 2022.
15. **Jiang, J.H.**, Melting Layer Characteristics of Cyclones, *Eos*, 22 March, 2022.
16. Li, J., K. Xu, M. Richardson, **J.H. Jiang**, G. Stephens, W. Lee, E. Fetzer, J. Yu, Y. Wang, F. Wang, Improved ice content, radiation, precipitation and low-level circulation over the tropical pacific from ECMWF ERA-interim to ERA5, *Environmental Research Communications*, Vol. 3, No. 8, 2021.
17. Chakraborty, S., **J.H. Jiang**, H. Su, R. Fu, On the Role of Aerosol Radiative Effect in the Wet Season Onset Timing over the Congo Rainforest during Boreal Autumn, *Atmospheric Physics and Chemistry*, doi:10.5194/acp-2020-1138,2021.
18. **Jiang, J.H.**, P. Rosen, K. Fahy, Avoiding the "Great Filter": A Projected Timeframe for Human Expansion Off-World, *Galaxies*, 9(3), 53, 2021.

19. Lee, M., J. Worden, R. Bucholz, H. Worden, M. Park, Y. Wang, J. Yang, M. Witek, H. Su, B. Byrne, K. Miyazaki, **J.H. Jiang**, 21st Century change in global small-size aerosols from combustion emissions, *ESSOAr*, <https://doi.org/10.1002/essoar.10507092.1>, 2021.
20. Basha, G., M. Ratnam, **J.H. Jiang**, P. Kishore, S. Babu, Influence of Indian Summer Monsoon on Tropopause, Trace gases and Aerosols in Asian Summer Monsoon Anticyclone observed by COSMIC, MLS and CALIPSO, *Remote Sensing*, 13(17), 3486, 2021.
21. Yang, J., Y. Wen, Y. Wang, S. Zhang, J. Pinto, E. Pennington, Z. Wang, Y. Wu, S. Sander, **J.H. Jiang**, J. Hao, J. Seinfeld, Y. Yung, From COVID-19 to Future Electrification: Assessing Traffic Impacts on Air Quality in a Megacity, *P.N.A.S.*, 118 (26) e2102705118, 2021.
22. Li, J., K. Xu, W. Lee, **J.H. Jiang**, E. Fetzer, J. Yu, Y. Wang, G. Stephens, L. Wang, Linking global land surface temperature projections to radiative effects of hydrometeors under a global warming scenario, *Environ. Res. Lett.*, <https://doi.org/10.1088/1748-9326/ac153c>, 2021.
23. Patel, P., **J.H. Jiang**, Cloud condensation nuclei characteristics at the Southern great Plains site: role of particle size distribution and aerosol hygroscopicity, *Environ. Res. Commun.* 3, No. 7, 2021.
24. Kong, Z., **J.H. Jiang**, Z. Zhu, K. Fahy, R. Burn, Analyzing the Stability of Non-coplanar Circumbinary Planets using Machine Learning, *Astrophysical Journal*, arXiv:2101.02316, 2021.
25. Sanghavi, S., R. West, **J.H. Jiang**, Cloudy Atmospheres on Directly Imaged Exoplanets: The Need for Accurate Particulate Representation in Photopolarimetric Simulations, Cloudy Atmospheres on Directly Imaged Exoplanets: The Need for Accurate Particulate Representation in Photopolarimetric Simulations, *The Astrophysical Journal*, 907:30 (15pp), 2021.
26. **Jiang, J.H.**, H. Su, L. Wu, C. Zhai, K. Schiro, Improvements in cloud and water vapor simulations over the tropical oceans in CMIP6 compared to CMIP5, *Earth and Space Science*, doi:10.1002/2021EA001520, 2021.
27. **Jiang, J.H.**, D. Zhao, X. Ji, B. Hu, Revisiting the Planet Mass and Stellar Metallicity Relation for Low-Mass Exoplanets Orbiting GKM Class Stars, *Universe*, 7, 88. <https://doi.org/10.3390/universe7040088>, 2021.
28. Cai, X., **J.H. Jiang**, K. Fahy, Y. Yung, A Statistical Estimation of the Occurrence of Extraterrestrial Intelligence in the Milky Way Galaxy, *Galaxies*, Vol 9, 1, doi:10.3390/galaxies9010005 2021.
29. Gu, L., S. Fan, J. Li, S. Bartlett, V. Natraj, **J.H. Jiang**, D. Crisp, Y. Hu, G. Tinetti, Y. Yung, Earth as a Proxy Exoplanet: Deconstructing and Reconstructing Spectrophotometric Light Curves, *The Astronomical Journal*, 161:122(13pp), 2021.
30. **Jiang, J.H.**, Polar Vortex Linked to Atmospheric Circulation at Daily Scale, AGU Eos, October 13, 2021, <https://eos.org/editor-highlights/polar-vortex-linked-to-atmospheric-circulation-at-daily-scale>.
31. Choi, M., S. Sander, R. Spurr, T. Pongetti, G. van-Harten, B. Drouin, D. Diner, D. Crisp, A. Eldering, O. Kalashnikova, **J.H. Jiang**, J. Hyon, D. Fu, Aerosol profiling using radiometric and polarimetric spectral measurements in the O₂ near infrared bands: Estimation of information content and measurement uncertainties, *Remote Sensing of Environ.*, Vol. 253, 2021.
32. **Jiang, J.H.**, Temperature Extremes: Exploring the Global Outbreak, AGU Eos, September 27, 2021, <https://eos.org/editor-highlights/temperature-extremes-exploring-the-global-outbreak>.
33. **Jiang, J.H.**, Satellite Estimates for Hydroclimatic Extremes, AGU Eos, September 20, 2021, <https://eos.org/editor-highlights/satellite-estimates-for-hydroclimatic-extremes>.
34. Li, J. W. Lee, K. Xu, **J.H. Jiang**, E. Fetzer, C. Chen, P. Hsu, H. Hsu, J. Yu, Y. Wang, Impacts of Falling Ice Radiative Effects on Projections of Southern Ocean Sea Ice Change under Global Warming, *TAO*, DOI: 10.3319/TAO.2020.10.15.01., 2020
35. Hwang, J, Y. Choi, H. Su, **J.H. Jiang**, Invariability of Arctic Top of Atmosphere Radiative Response to Surface Temperature Changes, *Earth and Space Science*, Vol. 7, 11, 2020.
36. Chakraborty, S., **J.H. Jiang**, H. Su, R. Fu., Deep convective evolution from shallow clouds over the Amazon Congo rainforests, *J. Geophys. Res. Atmos.*, <https://doi.org/10.1029/2019JD030962>, 2020,
37. Su, H., L. Wu, **J.H. Jiang**, R. Pai, A. Liu, A. Zhai, P. Tavallali, M. DeMaria, Applying Satellite Observations of Tropical Cyclone Internal Structures to Rapid Intensification Forecast with Machine Learning, *Geo. Res. Lett.*, <https://doi.org/10.1029/2020GL089102>, 2020.

38. Li, J., K. Xu, M. Richardson, W. Lee, **J.H. Jiang**, J. Yu, Y. Wang, E. Fetzer, L. Wang, G. Stephens, H. Liang, Annual and seasonal mean tropical and subtropical precipitation bias in CMIP5 and CMIP6 models, *Environmental Research Letters*, 15, 2021.
39. **Jiang, J.H.**, Global Warming Intensifies Turbulence Over Northern Eurasia, *Eos Editors' Highlight*, <https://eos.org/editor-highlights/global-warming-intensifies-turbulence-over-northern-eurasia>, 2021.
40. J. Li, K. Xu, W. Lee, **J.H. Jiang**, Y. Wang, E. Fetzer, J. Yu; L. Wang, Comparisons of radiation-circulation coupling over the tropical and subtropical ocean between AMIP6 and CMIP6, *Terrestrial, Atmospheric & Oceanic Sciences*, Vol. 32 Issue 1, p89-112. 24p, 2021
41. Yue, Q., **J.H. Jiang**, A. Heymsfield, K-N. Liou, Y. Gu, A. Sinha, Combining In-Situ and Satellite Observations to Understand the Vertical Structure of Tropical Anvil Cloud Microphysical Properties During the TC4 Experiment, *Earth and Space Science*, Vol. 7, Issue 4, <https://doi.org/10.1029/2020EA001147>, 2020.
42. Pan, B., Y. Wang, T. Logan, J. Hsieh, J.H. Jiang, Y. Li, R. Zhang, Determinant Role of aerosols from industrial sources in Hurricane Harvey's catastrophe, *Geo. Res. Lett.*, Vol. 47, Issue 23, 2020
43. Su, H., L. Wu, C. Zhai, **J.H. Jiang**, J. Neelin., Y. Yung, Observed tightening of tropical ascent in recent decades and linkage to regional precipitation changes. *Geo. Res. Lett.*, 47, <https://doi.org/10.1029/2019GL085809>, 2020.
44. Rooney, G.B., Y. Wang, J.H. Jiang, B. Zhao, Z. Zeng, J. Seinfeld, Air quality impact of the Northern California Camp Fire of November 2018, *Atmospheric Chemistry and Physics*, 2, 23, 2020.
45. **Jiang, J.H.**, Zero-valent Iron in the Oxidizing Atmosphere? AGU Eos, October 26, 2020, <https://eos.org/editor-highlights/zero-valent-iron-in-the-oxidizing-atmosphere>.
46. Wang, Y., T. Le, G. Chen, Y. Yung, H. Su, J. Seinfeld, **J.H. Jiang**, Reduced European aerosol emissions suppress winter extremes over northern Eurasia, *Nature Climate Change*, Vol. 10, 6, 2020.
47. Schiro, K., S. Sullivan, Y. Kuo, H. Su, P. Gentile, G. Elsaesser, **J.H. Jiang**, J.D. Neelin, Environmental controls on tropical mesoscale convective system precipitation intensity, *Journal of the Atmospheric Sciences*, <https://doi.org/10.1175/JAS-D-20-0111.1>, 2020.
48. Vignesh, P., **J.H. Jiang**, et al. Assessment of CMIP6 Cloud Fraction and Comparison with Satellite Observations, *Earth and Space Science*, <https://doi.org/10.1029/2019EA000975>, 2019. *EOS Research Spotlight*.
49. Chen, Y., J. Li, W. Lee, D. Diner, M. Garay, **J.H. Jiang**, Y. Wang, J. Yu, O. Kalashnikova, Evaluation of sea salt aerosols in climate systems: global climate modeling and observation-based analyses, *Environmental Research Letters*, 15, 3, 2020.
50. **Jiang, J.H.**, Using Machine Learning to Detect and Estimate Global Snowfall, *Eos Editors' Highlight*, <https://eos.org/editor-highlights/using-machine-learning-to-detect-and-estimate-global-snowfall>, 2020
51. Li, J., K. Xu, **J. H. Jiang**, Wei-Liang Lee, Li-Chiao Wang, Jia-Yuh Yu, Graeme Stephens, Eric Fetzer, Yi-Hui Wang, An Overview of CMIP5 and CMIP6 Simulated Cloud Ice, Radiation Fields, Surface Wind Stress, Sea Surface Temperatures and Precipitation over Tropical and Subtropical Oceans, *J. Geophys. Res.*, <https://doi.org/10.1029/2020JD032848>, 2020.
52. J. Li, W. Lee, K. Xu, **J.H. Jiang**, E. Fetzer, C. Chen, Y. Wang, J. Yu, P. Hsu, H. Hsu, The role of falling ice radiative effects on climate projections over Arctic under global warming, *Terr. Atmos. Ocean. Sci.*, Vol. 31, 633-648, 2020.
53. **Jiang, J.H.**, Ensemble Learning Estimates Terrestrial Water Storage Changes, *Eos Editors' Highlight*, <https://eos.org/editor-highlights/ensemble-learning-estimates-terrestrial-water-storage-changes>, 2020.
54. Chakraborty, S., **J.H. Jiang**, H. Su, R. Fu, Deep convective evolution from shallow clouds over the Amazon and Congo rainforests, *Journal of Geophysical Research: Atmospheres*, <https://doi.org/10.1029/2019JD030962>, 2020.
55. **Jiang, J.H.**, Q. Yue, H. Su, P. Kangaslahti, M. Lebsock, S. Reising, M. Schoeberl, L. Wu, R. Herman, Simulation of remote sensing of clouds and humidity from space using a combined platform of radar and multi-frequency microwave radiometers, *Earth and Space Science*, Vol. 6, Issue 7., doi:10.1002/2017EA000296, 2019. *EOS Research Spotlight*.

56. Fan, S., C. Li, J. Li, S. Bartlett, **J.H. Jiang**, V. Natraj, D. Crisp, and Y. Yung, Earth as an Exoplanet: A Two-dimensional Alien Map, *The Astrophysical Journal Letters*, Volume 882, Number 1, 2020
57. **Jiang, J.H.**, X. Ji, N. Cowan, R. Hu, Z. Zhu, Empirical Predictions for the Period Distribution of Planets to be Discovered by the Transiting Exoplanet Survey Satellite, *The Astronomical Journal*, vol. 158, No. 2, <https://iopscience.iop.org/article/10.3847/1538-3881/ab2a7a>, 2019.
58. Tian, E., H. Su, B. Tian, **J.H. Jiang**, Interannual variations of water vapor in the tropical upper troposphere and the lower and middle stratosphere and their connections to ENSO and QBO, *Atmos. Chem. Phys.*, 19, 9913–9926, <https://doi.org/10.5194/acp-19-9913-2019>, 2019.
59. Su, H., C. Zhai, **J.H. Jiang**, L. Wu, J. Neelin, Y. Yung, A dichotomy between model responses of tropical ascent and descent to surface warming, *Nature Climate and Atmospheric Science*, 2 (1), 2019
60. Zhao, B., Y. Wang, Y. Gu, K. Liou, **J.H. Jiang**, J. Fan, X. Liu, L. Huang, Y. Yung, Ice nucleation by aerosols from anthropogenic pollution, *Nature Geoscience*, volume 12, pages 602–607, 2019.
61. H. Shi, Z. Jiang, B. Zhao, Z. Li, Y. Chen, Y. Gu, **J.H. Jiang**, M. Lee, K. Liou, J. Neu, V. Payne, H. Su, Y. Wang, M. Witek, J. Worden, Modeling Study of the Air Quality Impact of Record-Breaking Southern California Wildfires in December 2017, Vol. 124, Issue 12, *J. Geophys. Res., Atmosphere*, doi:10.1029/2019JD030472, 2019.
62. Li, J., S. Fan, P. Kopparla, C. Liu, **J. H. Jiang**, V. Natraj, Y. Yung, Study of Terrestrial Glints Based on DSCOVR Observations, *Earth and Space Science*, 6, 166-173, 10.1029/2018EA000509, 2019.
63. Dolinar, E., X. Dong, B. Xi, **J.H. Jiang**, N. Loeb, J. Campbell, H. Su, A global record of single-layered ice cloud properties and associated radiative heating rate profiles from an A-Train perspective, *Climate Dynamics*, <https://doi.org/10.1007/s00382-019-04682-8>, 2019.
64. Sung, K., E. Wishnow, T. Crawford, D. Nemchick, B. Drouin, G. Toon, S. Yu, V. Payne, J.H. Jiang, FTS measurements of O₂ collision-induced absorption in the 565–700 nm region using a high pressure gas absorption cell, *Journal of Quantitative Spectroscopy and Radiative Transfer*, Vol. 235, 2019.
65. Kubar, T., **J.H. Jiang**, Net Cloud Thinning, Low-Level Cloud Diminishment, and Hadley Circulation Weakening of Precipitating Clouds with Tropical West Pacific SST Using MISR and Other Satellite and Reanalysis Data, *Remote Sensing*, <https://doi.org/10.3390/rs11101250>, 2019.
66. Zhao, C., Y. Wang, X. Shi, D. Zhang, C. Wang, **J.H. Jiang**, Q. Zhang, H. Fan, Estimating the Contribution of Local Primary Emissions to Particulate Pollution Using High - Density Station Observations, *J. Geophys. Res., Atmospheres*, 124 (3), <https://doi.org/10.1029/2018JD028888>, 2019.
67. Lee, W., J. Li, K. Xu, E. Suhas, **J.H. Jiang**, Y. Wang, G. Stephens, E. Fetzer, J. Yu, Relating precipitating ice radiative effects to surface energy balance and temperature biases over the Tibetan Plateau in winter, *JGR-Atmospheres*, 124, 12, 2019.
68. Li, J., M. Richardson, W. Lee, E. Fetzer, G. Stephens, **J.H. Jiang**, Y. Hong, Y. Wang, J. Yu, Y. Liu, Potential faster Arctic sea ice retreat triggered by snowflakes' greenhouse effect, *The Cryosphere*, 13, 969-980, 10.5194/tc-13-969-2019, 2019.
69. Dolinar, E., X. Dong, B. Xi, **J.H. Jiang**, N. Leob, J. Campbell, H. Su, A global record of single-layered ice cloud properties and associated radiative heating rate profiles from an A-Train perspective, *Climate Dynamics*, 1-20, 2019.
70. Wang, Y., P. Ma, J. Peng, R. Zhang, **J.H. Jiang**, R. Easter, Y. Yung, Constraining aging processes of black carbon in the Community Atmosphere Model using environmental chamber measurements, *Journal of Advances in Modeling Earth Systems*, 10, 2514–2526, 10.1029/2018MS001387, 2018.
71. **Jiang, J.H.**, H. Su, L. Huang, Y. Wang, S. Massie, B. Zhao, A. Omar, Z. Wang, Contrasting Effects on Deep Convective Clouds by Different Types of Aerosols, *Nature Communications*, 9, 3874, doi:10.1038/s41467-018-06280-4, 2018. **NASA News Release.**
72. **Jiang, J.H.** and S. Zhu, A Planetary Mass and Stellar Radius Relationship for Exoplanets Orbiting Red Giants, *Res. Notes AAS*, 2, 4, doi:10.3847/2515-5172/aae48c, 2018.
73. **Jiang, J.H.**, A.J. Zhai, J. Herman, C. Zhai, R. Hu, H. Su, V. Natraj, J. Li, F. Xu, Y.L. Yung, Using Deep Space Climate Observatory Measurements to Study the Earth as An Exoplanet, *Astronomical Journal*, 156, 10.3847/1538-3881/aac6e2, 2018. **NASA News Release.**

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